

A NEW SPECIES OF *HUMBOLDTIANA* (HELMINTHOGLYPTIDAE)  
FROM THE SIERRA VIEJA MOUNTAINS OF TEXAS

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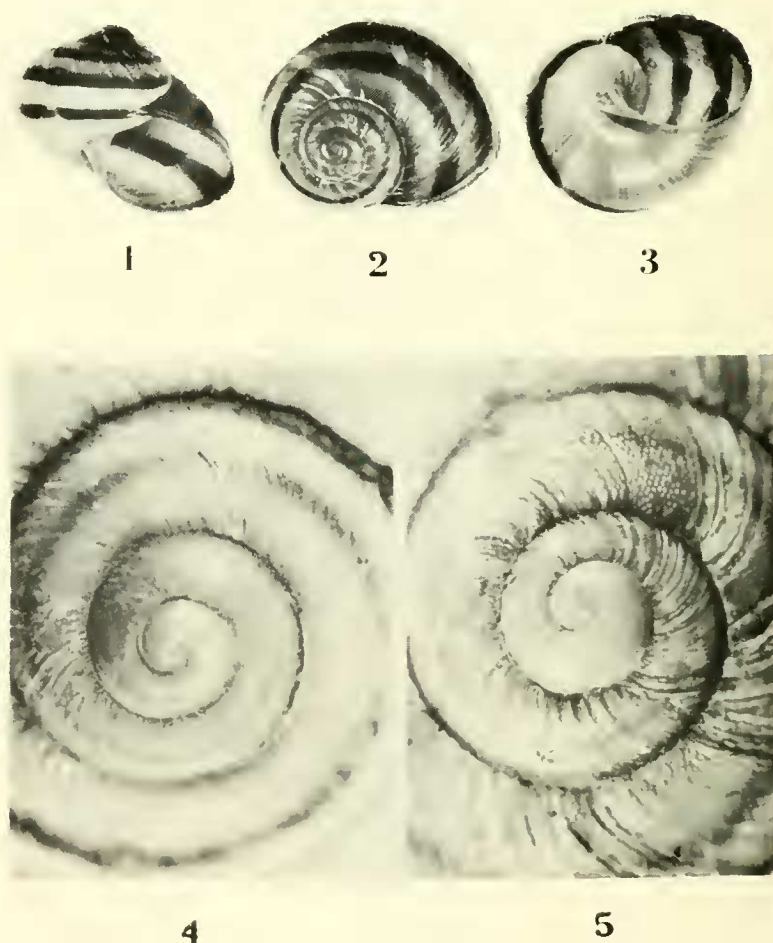
ABSTRACT

*Humboldtiana fullingtoni* Cheatum, a new pulmonate species, and the tenth species of this genus recorded from the Texas Trans-Pecos mountainous area, is described from 5,000 ft., southern end of the Sierra Vieja Mountains, Presidio Co., about 40 miles SSW of Valentine, Texas. It is closest in shell morphology to *H. hoegeana praesidii* Pilsbry. Its soft parts are grayish brown, while those of other Texas species in the genus are yellow, orange or golden. Significant distinguishing characters in the genus are discussed.

*Humboldtiana fullingtoni* new species

Figs. 1, 2, 3

*Description of holotype* - Shell rather thin, subglobose and slightly depressed; ornamented by three, wide dark-brown bands on the basal whorl; two bands at the beginning of the penult whorl, the lower of these two fading out, thus leaving only the upper band which gradually fades out about one-half turn from the embryonic whorls. Width of the bands on basal whorl (measured just back of the lip): upper 4.0 mm.; middle 4.3; and lower 4.6. With the exception of rather close-set growth lines, some of which are marked with whitish streaks and splotches, shell smooth and devoid of distinct granulations, although under high power very minute granulations are visible. Inner basal portion of peristome strongly reflected over the umbilicus in the form of a slightly rolled-over triangular plate. Narrow umbilical chink not visible from a direct apertural view. Embryonic whorl convex and the initial one-half embryonic whorl smooth; following whorl marked with minute irregularly-arranged radial and slightly curved striae. Inner lip slightly thickened; ground color of inner apertural wall the same wood-brown of outer shell and broken by dark bands on the basal whorl. Shell height: 31.2 mm.; diameter: 38.6 mm.; apertural height: 23.6 mm.; apertural width: 21.2 mm.; spiral angle:  $122^\circ$  (using Parodiz measuring methods, 1951); sutural angle:  $2^\circ$ ; columellar angle:  $15^\circ$ ; 4 whorls.



FIGS. 1, 2 and 3, *Humboldtiana fullingtoni* Cheatum, new species. Holotype, 31.2 mm. in height, 38.6 mm. in width. Apical views of *H. ferrissiana* (fig. 4) and *H. chisosensis* (fig. 5).

Living animal uniform fuscous. When withdrawing into the shell the animal discharges a considerable quantity of a clear, frothy viscous substance. The animal when fully extended measured approximately 65 mm. in length.

Holotype: No. 2186 - 5A Dallas Museum of Natural History; paratypes M.C.Z.; USNM 706882; University of Michigan Museum of Zoology; Carnegie Museum; and the Academy of Natural Sciences of Philadelphia.

#### COMMENTS

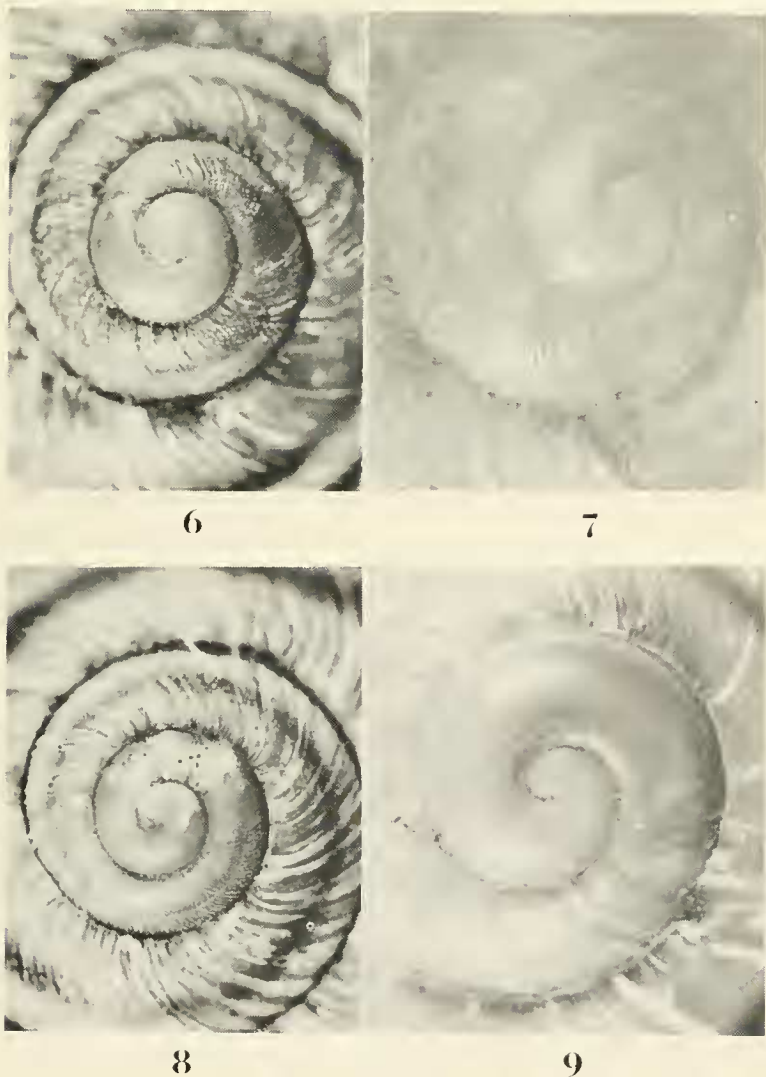
The new species, *Humboldtiana fullingtoni*, was collected April 20, 1971, at an altitude of approximately 5,000 ft. along the rimrocks overlooking the Rio Grande River near the southern end of Sierra Vieja Mountains in Presidio County, Texas. The type locality is situated about 40 miles south-southwest of Valentine, Texas.

The snail-collecting expedition was conducted under auspices of the Dallas Museum of Natural History, Mr. Hal Kirby, Director. The first *Humboldtiana* were discovered by Mr. Richard Fullington, Curator of Invertebrates at the Museum and I am naming this species in his honor. Most of the ten living snails and twenty-four "bones" collected were found at depths of one and one-half to over three feet between and beneath rocks. The living snails were attached to rocks and the dead shells were dug out of dirt and humus at the above depths. The soil and humus even at these depths were powder-dry since the last rainfall received in that area had occurred the preceding September. Some of the living snails had secreted as many as four apertural epiphragms in order to prevent water loss.

In size this new species conforms with four other species - *H. edithae* Parodiz which was collected on Mt. Emory in the Chisos Mountains, *H. agavophila* Pratt, collected at Laguna Meadow just west of Mt. Emory, *H. cheatumi* Pilsbry collected in the Davis Mountains; and, (in the collections at the Dallas Museum of Natural History two shells) *H. chisosensis* Pilsbry which measure 39 mm. in diameter. The latter were collected by Mr. E. H. Miner in 1951, but the precise locality in the Chisos range was not given. As more shells of *Humboldtiana* are collected, undoubtedly the size range of the various species will be extended.

Although the color bands of *H. fullingtoni* show considerable variation in width, all are dark-brown in color. In one large, partly broken, fresh shell the interspace between the middle and lower bands is whitish and this wide whitish area extends around the basal whorl. This shell, compared with other specimens collected at the same place, exhibits extreme variation in the width of color bands. Measurements of the bands (just back of the lip): upper, 3.7 mm.; middle, 1.7; and lower 6.3. Such variation precludes the use of color band width as a distinct taxonomic feature. In all the other shells the ground color is of a uniform light-brown with the exception of the whitish streaks and splotches which are irregular in distribution.

According to Pilsbry's (1939) description of *H. höegeana praesidii*, *H. fullingtoni* conformed closer to this subspecies than any other species described for the genus. Since I had not had the opportunity of examining the type of *H. höegeana praesidii* (U. S. N.



FIGS. 6-9, Apical views of *Humboldtiana cheatumi* (fig. 6), *edithae* (fig. 7), *H. agavophila* (fig. 8), and *H. fullingtoni* (fig. 9).



TABLE 1. Measurements of Paratypes in mm.

| Diameter | Height | Aperture Height | Apertural Width | Whorls |
|----------|--------|-----------------|-----------------|--------|
| 36.0     | 30.15  | 18.8            | 22.2            | 4      |
| 35.8     | 31.3   | 18.25           | 22.4            | 3½     |
| 37.5     | 32.6   | 22.8            | 19.0            | 3¾     |
| 37.1     | 31.8   | 20.7            | 22.6            | 3¾     |
| 38.0     | 31.2   | 19.9            | 23.2            | 3½     |
| 36.5     | 31.1   | 18.3            | 21.4            | 3½     |
| 35.2     | 31.7   | 18.8            | 21.4            | 3½     |
| 35.8     | 29.8   | 19.1            | 20.6            | 3¾     |
| 38.1     | 33.6   | 24.5            | 23.5            | 4      |

M. 134160), I asked Dr. Harald Rehder, Senior Zoologist, Division of Mollusks at the U. S. N. M. to compare a paratype of *H. fullingtoni* with the type shell of *H. hoegeana praesidii*. After a careful examination of the two shells, Dr. Rehder made the following comments (Correspondence, June 29, 1971): "Your species is indeed closer to this subspecies than to any other Texas form . . . The apical whorls of *H. fullingtoni* do show under high power fine riblets that are faintly granulated in places. On the third whorl these granules increase in strength and then on the penultimate whorl they disappear. In *H. hoegeana praesidii* this granulation appears to be much more obscure, though our specimens, including the type, are rather worn and this granulation may have been rubbed off. Your new species is furthermore larger and darker in color, with the bands wider than in *H. hoegeana praesidii*".

Apical views of *H. ferrissiana*, *H. chisosensis*, *H. cheatumi*, *H. edithae* and *H. agavophila* (figs. 4, 5, 6, 7 and 8 respectively) show the distinct shell granulations in contrast to Fig. 9 of *H. fullingtoni* in which granulations are absent.

In living snails of the Texas *Humboldtiana* which we have had the opportunity to examine, all have had various parts of the body either a yellow, orange or golden color. The color of the living animal of *H. fullingtoni* is a uniform fuscous or grayish brown.

When considering shell characteristics of the various species of Texas *Humboldtiana* it seems that the most reliable distinguishing characters to be used are the presence or absence of visible granulations, shape of the granulations, smoothness or ornamentation of the embryonic whorls, their shape (flat or rounded), ground and band color of the shell and shell angles.

Shell color and markings must be based upon fresh shells. In old shells the periostracum is so frequently eroded so as to completely obliterate granulations and other distinctive shell markings.

Ten species of *Humboldtiana* have now been described from the mountainous areas of the Texas Trans-Pecos, and these are the following Pilsbry (1939):

*Humboldtiana chisosensis* Pilsbry  
*Humboldtiana ferrissiana* Pilsbry  
*Humboldtiana hoegeana praesidii* Pilsbry  
*Humboldtiana cheatumi* Pilsbry  
*Humboldtiana palmeri* Clench and Rehder  
*Humboldtiana texana* Pilsbry  
*Humboldtiana ultima* Pilsbry

Pratt (1971), described *Humboldtiana agavophila* from the Chisos Mts.; Parodiz (1954) described *Humboldtiana edithae* from Mt. Emory in the Chisos Mts.; and this species, *Humboldtiana fullingtoni* is the tenth species to be described from the Texas Trans-Pecos. Pilsbry (1927), had listed *H. chisosensis*, *H. texana* and *H. ultima* from Texas. In his key, based upon shell characters, the major breaks involved granulations and whether or not the shell was smoothish or with wrinkles along the growth lines. *H. hoegeana praesidii* and *H. fullingtoni* appear to be the only Texas *Humboldtiana* without any traces of visible granulation.

It is my opinion that the taxonomic status of the species under the genus *Humboldtiana* is debatable. It is hoped that in the not too distant future careful morphological studies of the soft parts will help to clarify the taxonomic "picture".

## LITERATURE CITED

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- Pratt, Lloyd 1971, "*Humboldtiana agavophila*, A New Helminthoglyptid Land Snail from the Chisos Mountains, Big Bend National Park", Southwest Naturalist 15 (4): 429-435.
- Parodiz, Juan J. 1951, "Methods de conchiliometria", Physis, Buenos Aires, No. 58, 20: 241-248.
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## BOOK REVIEW

AUSTRALIAN SHELLS, *illustrating and describing 600 species of marine gastropods found in Australian waters. By Barry R. Wilson and Keith Gillett, with a preface by R. Tucker Abbott. 168 pp., 106 polychrome plates, 34 monochrome figures; page size 9 by 11½ inches. Charles E. Tuttle Co., Rutland, Vermont 05701, 1971. \$21.50.*

Biologist Barry Wilson and photographer Keith Gillett have combined their talents to produce a profusely illustrated and informative handbook on the shelled gastropods one would most likely encounter by shore collecting and diving in Australian waters. The introductory text includes brief discussions of the classification, nomenclature and biology of mollusks in general.

A plea is made for the conservation of Australian mollusks, before irresponsible collecting reduces readily accessible shores near populated areas "... to barren biological deserts..." In this regard, they cite California as an example where "... some seaboard schools and universities have to import specimens from other areas or take their students to places hundreds of miles away before they are able to look at living animals instead of only seeing pictures of them in books," a condition, unfortunately, not limited to our west coast.

For each family, a brief introduction including distributional, biological, and ecological data, is given, together with a description of each species figured on the full-page, color plates, which are conveniently placed facing the text. Limitations of space have per-

mitted the inclusion of only 600 species; for example of the 23 species of abalones living in Australian waters, 12 are illustrated in the book. The descriptions include data on size, range, and abundance, together with synonymous names that have been used for Australian forms.

This book is outstanding for the numerous color photographs and line drawings of living mollusks. Hopefully, the inclusion of biological and ecological data in this book will stimulate collectors to observe and record such information, and to be more restrictive in the selection of specimens for their cabinets. The authors suggest that only a few well-preserved specimens of a species should be taken, and they recommend that females associated with eggs should be left undisturbed.

There are few errors of commission for an undertaking of this magnitude. Parts of the text are somewhat out of date. Some of the nomenclature is not current. However, in most cases, the familial groups requiring nomenclatural changes are undergoing intense study by malacologists, and specialists have proposed differing classifications, as in the case of the family Muricidae.

This beautifully illustrated book is highly recommended to anyone seeking information on the marine life inhabiting Australian coastal waters.

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